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An Essay
On diarrhoea

by

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of Pennsylvania
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When we consider the complex sympathies and numerous relations which the alimentary canal bears to the different organs of the human body, we can form some idea of the part it plays in the diseases to which it is subject. One of the many of these is that now under consideration viz diarrhœa.

Definition

Every subject on which we treat is soon lost sight of for want of being well defined. This always has and will constitute, a difficulty, either on account of the vagueness of the idea which the definitions proposed to convey, or, from the circumstance of not being well sufficiently comprehensive. Thus, if we would receive the idea literally conveyed by the derivation of the word diarrhœa, it would embrace almost all of the diseases of the digestive canal. To arrive at as much precision as lies in our power, we will adopt the

definition of a celebrated author, with a little modification. That diarrhoea is too great a looseness and frequency of the alvine evacuations, accompanied with little or no griping and tenesmus.

History.

This is the effect of diseased intestinal action, and gives us no information of the cause or nature of the malady, and hence the necessity of an inquiry into its pathology. But to do this, before we inquire into the physiology of the parts concerned in the disease, of which we are about to speak, would be rushing in medias res. As every physician, who would practice with any regard to the safety of his patients, must know the healthy functions of every part in which the disease may be located, so we must know the healthy functions of the digestive apparatus or that proxy

which our food must undergo in the alimentary canal in a state of health, we thereby get a Standard, by which we are enabled to pronounce every deviation therefrom the effect of disease. After the food has been duly masticated and insalivated it passes by the act of deglutition into the Stomach when it is converted into a pulp like substance called chyme. By what means this is performed we would not pretend to say, a great many ~~unsatisfactory~~ theories have been ably suggested, but have left the subject nearly as they took it up. The aliment having been sufficiently digested in the stomach, passes through the pylorus into the duodenum, or Second Stomach, as it has been called. After remaining there a short time, being acted upon by the bile, and pancreatic juice, it is separated into chylous and

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excrementitious matter. The former is
taken up by the lacteals, and carried
into the thoracic duct, which empties
itself into the left subclavian vein,
where it becomes mixed with the
blood; the latter passes into the small
intestines which, alone, occupy so great
a portion of the digestive canal.
The progress of the food along them,
is very slow, being retarded by their
numerous curvatures, which favour
the long continued presence
of the food within their cavity,
so that the chyle separated from
the excrementitious part, may
present itself to the mouths of the
absorbents, which, as is well known
diminish greatly as the distance
increases from the stomach. After
it reaches the large intestines, the

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food undergoes very little change;
having become, in a great measure, foreign
matter, from whence it is discharged.
If these changes are not complete;
for instance if the food is not duly
masticated, the gastric juice will not
penetrate it with facility and it
passes out of the stomach into
the duodenum before it is converted
into chyme. The small intestines in
such a case, will be irritated, as by a
foreign body, and hence an increased
quantity of mucus will be secreted, and
frequent discharges constituting one
variety of diarrhoea.

Though the change be complete in
the stomach, yet, if the situation of the
when they arrive the chyme passes it over
be secured a manner, so that the internal
valve is diseased, so as to allow it too

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ready a passage into the large intestines,
 these can well be irritated, and we shall
 have another variety of disease. The mechanism
 of the digestive canal next claims our attention.
 It is composed of four coats; the serous, muscular,
 cellular and mucous, the serous is a common
 coat and does not require special notice
 on this occasion; the cellular also does not
 play any important part, to the inner
 villous or mucous and muscular coats
 our attention is to be mainly directed.
 The peristaltic motion is accomplished by means
 of the action of the muscular coat, this is
 the motive power; but, as substances in
 the alimentary canal are not directly
 applied to it, we must presume its
 motion to be secondary to impressions
 on the mucous coat. It may, then, be asked
 is the contraction of the muscular coat whether
 natural or diseased, in healthy digestion

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or in diarrhea, dependent on the stimulation of the mucous coat? This may be illustrated by the operation of our common emetic and purgative medicines. When introduced into the stomach they irritate the mucous surface, which calls the muscular coat into irregular and spasmodic actions. In fact even unnatural stimulus

to the mucous membrane, causes it to pour out an increased quantity of mucus, attended by a contraction of the muscular coat. So also in the evacuation of the feces; when they arrive in the rectum, as they contain no longer any nutritious matter, they act as a foreign body, irritate the mucous coat, which, irritation being conveyed to the muscular coat, stimulates it to contraction: by which, together with the aid of other muscles, the feces are expelled. The different ways by which the

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mucous coat may be irritated, are either local or sympathetic. Stimulents may serve as causes of irritation, when not sufficiently mellowed in the mouth, or on account of their being indigestible, and not suited to the weak state of our stomach; either on account of their quantity or quality. Rugged fruits, crude vegetables will come under this head: all our medicinal and corrosive substances, when introduced into the alimentary canal, irritate its internal surface, cause it to take on an increased secretory action, whereby it pours out its fluids, calls the muscular coat into frequent and spasmodic action. Worms on the same principle, have been found to be a cause of this complaint.

The sympathetic are an excess of cold or heat, applied to the skin,

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the mucous coat, on account of the strict relation between it and the surface, takes on an irritated action. diseases, situated in different parts of the system are causes of this disease, of which pulmonary consumption holds no inferior rank. The passions of the mind have their influence, such as fear and anger which are occasionally known to produce the disease under consideration. Dentition, as is well known, makes children liable to the disease. Physicians have taken advantage of the way in which nature cures gout by inducing a diarrhoea. All the above agents, by irritating the internal intestinal surface, will cause it to pour out its fluids, and call the muscular coat into frequent and unnatural action, constituting

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diarrhoea. So long as the leading
 phenomena of the disease continue,
 we may naturally suspect an irritation
 of the mucous coat to be present. There
 are two kinds of irritation, 1st where the
 intestinal surface is healthy, but irritated
 by medicinal or indigestible substances. 2^d where
 none of these are actually present, but, where
 the inner surface, by their continued
 application, has become altered, inflamed
 or ulcerated, then, the common, and otherwise
 bland, aliment, will move a source of
 irritation, and keep up a disease similar
 to that produced in a healthy state
 of the surface, by acid and corroding
 articles. This may be proved by the state
 of the conjunctiva when inflamed,
 its natural stimulus right can no
 longer be borne
 This state of the diseased intestines

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(especially of the duodenum and jejunum)
with, by continuous sympathy, along
the ducts hepatic and pancreatic,
cause their respective glands to pour
out their fluids in an increased
quantity, so as to constitute ^{diarrhoea} bilious,
and still further irritate the diseased
intestine. It is at present established
by Broussais and others, as a general
law, that each gland is subservient
to its mucous surface, as in the
salivary glands, which pour out their
fluids in consequence of the irritation
or stimulation of their mouths,
opening upon a mucous surface, with
which they are in connexion. The
lacrimal gland, secretes more
copiously, when the conjunctiva
is inflamed. Post mortem examinations
will bear us out in this our pathology

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of the disease. In every fatal complaint
of this nature, we find more or less
of the ravages of inflammation, the
lining membrane of the digestive
tube highly inflamed, and sometimes
and sometimes even ulcerated.

Diagnosis

According to Cullen, diarrhoea is
to be distinguished from dysentery,
a disease which it most resembles
by, not being contagious, its
existing without fever, the evacuations
not being mucous and bloody,
and the tormina and tenesmus
not being so violent, but, after
all, they are so much blended with
each other, that it is difficult to draw
a line between a mild case of the
latter, and an aggravated case of

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the former. To draw a distinction between diarrhoea and other diseases will be unnecessary. Its diagnostic signs are sufficiently numerous.

Prognosis

In forming our prognosis in this disease, we are to be determined by the particular cause from which it arises; whether symptomatic of another disorder, and whether of a critical nature; as likewise by the degree of debility present in the system, and the obstinacy with which it resists our remedies.

Treatment

In the treatment of this disease, we may divide it into idiopathic and symptomatic. The indications in the cure of diarrhoea, are 1st to remove

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the causes of the disease. 2^d to a local irritation, which from our pathology is rather simple. If the patient be feverish, and the disease be attended with local pain and much uneasiness it will be necessary to abstract blood: if no striking effects result from the first bleeding, it should be repeated, every two or three days, as long as the state of the pulse, and the general strength of the patient will warrant. It is most prudent to take little blood at a time, and repeat it often; emetics and purgatives ought in a great measure to be excluded from the treatment of this disease: if any, the mildest kind of purgatives ought to be given, such as castor oil, magnesia, sulphur, &c. Cullen, taking a more correct view of the nature of this complaint, was among the first to condemn the purgative

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rian in this disease. No person in, his
 senses should use an emetic in a phlegmatic
 stomach and him, should resort to
 purging, when the intestines are inflamed.
 The impropriety of the practice, in the
 latter, is as glaring as in the former.
 The practice of active purging, arose
 among the founders and advocates
 of the humoral pathology, to evacuate
 the concocted matter, which the vessels
 had deposited in the intestines. The
 warm bath may be used in this
 disease, with considerable efficacy,
 particularly as a revulsive agent,
 by determining to the surface.
 Cupping or rubbing over the abdomen,
 will be found one of the most efficient
 remedies, to which we can have recourse
 in this disease, especially when general
 bleeding is forbidden, and the local

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uneasiness and distress. Blisters,
 applied to the extremities principally to
 the wrists and ankles, are recommended by
 some practitioners, which we doubt by
 the diversion they occasion, are very
 beneficial. Diaphoretics are very serviceable,
 particularly if the disease is occasioned
 by cold, increasing the perspiration;
 the acetate of ammonia, at this form
 of the disease may be used with
 decided advantage, in fact any
 diaphoretic preparation, which has
 opium for its base, such as Favers
 powder. On which account, we
 direct the patient to wear flannel
 and be warmly clothed. The flannel
 roller, as introduced by a distinguished
 professor of this University, and
 particularly enforced, is certainly of
 great service: it acts by keeping up

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an equal respiration on the surface,
and giving support to the bones,

If the disease proceeds from unwholesome
food, it ought to be discontinued; if
in children, dentition be the cause,
the gums should be scarified, to relieve
irritation; if from worms, they ought
to be dislodged, for as long as the
cause remains, of course the disease will
remain which is the effect. Particular
attention ought to be paid to the patient's
clothing, and an avoidance of all the exciting
causes. These sometimes fail where a parent
in some distant part, will do what the
whole catalogue of medicines will not
be able to effect. The strong sympathy
which exists between the brain and the
auricular canal, is known to almost
every one in medicine. By coming in
contact with new faces and new scenes

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it rouses the mind from its depressed state, which causes a healthy reaction on the system. The celebrated Locke was well aware of this sympathetic connexion, when he remarked, a man having loose bowels never thought nor acted energetically. And the witty Voltaire, somewhere remarks, that there was many a war, because the minister could not get a discharge.

Symptomatic diarrhoea can not of course be cured, as long as the original complaint lasts, but merely be palliated. We should be careful not to arrest it, for it is frequently critical in some diseases, as gout, rheumatism. In chronic diarrhoea, very little can be done, except alleviating the symptoms, by keeping the patient on low diet, and applying liniments, administering opium, Camphor. After all that is said, in the treatment of this complaint, whatever

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may be its cause or character, an attention to diet is of the utmost moment, nothing as an article of food is admissible, unless it be light, bland, and easily digested, such as rice, tapioca, sage, gum water, barley water. All malt and liquors having alcohol in them, should be proscribed, as they have a tendency to increase the irritation. This part of the treatment can not be too much insisted upon, the good results arising from this practice in diseases, by one of our most eminent practitioners, are too glaring not to have directed the attention of physicians to this department of medicine.

